Public (E.P. Audit)

(1953) Department

MS SERIES.

G.O. (MS) No. 2360

Dated 3-9-1953

passed

MS

Superintendent

FOR MYSORE STATE

[Despatch Abstract.]

Community projects - South Kanara Area Block III - Communications - Forming a 'Katcha' road from Savoor to Invathur Construction of 1 bridge and 12 culverts - Estimate - Sanctioned.

ACCOUNTS (COMMUNITY PROJECTS) 8 AUG 1953 PUBLIC WORKS

Ref. 1181/53-B.

Project Executive Office, S.Kanara
Mangalore, d/- 4th August 1953.
****

From
- Sri G.Sivadri, B.A.,
Project Executive Officer,
MANGALORE.

To
The Director of Community Projects
and Ex-Officio Secretary to Govt.,
Fort St.George, MADRAS 9.

23630

.....

Sir,

SUB: COMMUNITY PROJECTS - South Kanara - Block III Communications - Formation of Sanoor Irvathur Road with one bridge, 5 pipe culverts and 7 box culverts - Estimate - Sanction - Requested.
*****

I submit herewith an estimate in duplicate with site plan etc., for the formation of road from Sanur to Irvathur with one bridge, five pipe culverts and seven box culverts. The particulars required are furnished below:

1)	Block No.	III.	
2)	Name of work.	Formation of a 4-1/4 mile road from Sanur to Irvathur with one minor bridge, 5 pipe culverts and 7 box culverts.	
3)	Whether the work was approved by the Project Advisory Committee and is included in the work programme.	Yes.	
4)	Cost of the work.		Rs. 22,400/-
5)	Villagers' contribution.	Earth work - Rs. 6,000/- 7 culverts - Rs. 4,020/- Land surrendered. Rs. 1,200/-	
			Rs. 11,220/-
6)	Expenditure to be borne by the Community Project.		Rs. 12,380/-

7) Remarks:

It is proposed to form a road from Sanoor to Irvathur branching off from mile 29/4-5 of the Mangalore Karkal main road. The length of the road is about 4¼ miles. At present, there is only a cart-track about 6 to 8 feet wide to a length of about 1½ miles and for the remaining distance ther is only a foot-path. Irvathur is a fairly extensive village with a population of over 2,000. The village is not connected with the main road by means of a proper road and as such the villagers experience considerable inconvenience. The proposed road will be beneficial to the villagers of Irvathur and also the surrounding villages of Padumarnad, Daregudde, Kellaputhige and Sanoor. In order to make it useful throughout the year, it is necessary to construct one bridge, five pipe culverts and 7 box culverts. An estimate for the work has been prepared at a cost of Rs. 22,400/- as shown below:

1)	Forming a road 4-2 miles. Earth work.	Rs.	6,000/-
2)	Constructing a pipe culvert at 0/0	Rs.	300/-
3)	Constructing a pipe culvert at 0/1-2.	Rs.	380/-
4)	Constructing a pipe culvert at 0/5-300	Rs.	380/-
5)	Constructing a pipe culvert at 0/6-100	Rs.	380/-
6)	Constructing a box culvert at 0/7-1/0	Rs.	600/-

2040

P.T.O.

7)	Constructing a box culvert at 1/1-2.	Rs. 600/-
8)	Constructing a box culvert at 1/5-6	Rs. 600/-
9)	Constructing a box culvert at 2/1-2	Rs. 600/-
10)	Constructing a box culvert at 3/3-4	Rs. 580/-
11)	Constructing a box culvert at 3/6-7	Rs. 580/-
12)	Constructing a box culvert at 3/7-4	Rs. 580/-
13)	Constructing a pipe culvert at 4/2	Rs. 480/-
14)	Constructing a bridge at 3/1-2	Rs. 9800/-
15)	Petty supervision and contingencies for all culverts.	Rs. 540/-
		Rs. 22,400/-

2. The villagers have undertaken to do the earth work costing Rs. 6,000/- through voluntary labour. Culverts Nos. 7 to 11 are within the jurisdiction of the Irvathur Pancha at Board. The cost of these culverts is Rs. 2,960/- The Pancha at Board has resolved to contribute Rs. 1,500/- for these works and the villagers have undertaken to bear the balance. Similarly culverts Nos. 12 and 13 are within the jurisdiction of the Pancha at Board, Sanoor, which has undertaken to bear an expenditure of Rs. 250/- The villagers have promised to contribute the balance of Rs. 810/- In addition to the above, the villagers have also gifted away land valued at Rs. 1,200/- Their total contribution for the work comes to Rs. 11,220/-

3. Culverts Nos. 2 to 6 costing to Rs. 2,040/- are in Padumarnad village. There is no Panchayat Board for this village and the villagers are also not in a position to contribute for these culverts. So this expenditure has to be borne by the Community Project. The bridge at 3/1-2 of the road, costing Rs. 9,800/- has also to be constructed at the cost of the Community Project. The total expenditure to be borne by the Community Project including petty supervision charges comes to Rs. 12,380/- as against the villagers' contribution of Rs. 11,220/- referred to above. The provisions made in the estimates have been explained in the report of the Assistant Engineer, accompanying the estimate. The road work was started by the villagers on 30-4-1953 and it was inspected by the Director of Community Projects, Madras on that day. I recommend that the estimate may be sanctioned for Rs. 12,380/-

PROJECT EXECUTIVE OFFICER.

T/4.8.

3.14

Pub (Cl. Audit) Dep

Memo No 23630 Pub (Cl. Audit) 53-1 dt 13.8

Sub:- Community Projects - South Kanara Area - Block III - Communications. Formation of a road with bridge and culverts from Sanoor to Irvathur -

Ref:- From the PEO. Mangalore Ref. No 1031/53-B dt 4.8.53

Reserve No 15/8

plcf

The PEO. Mangalore is requested to furnish the design calculations relating to the proposed bridge on the Sanoor - Irvathur road, said to have been enclosed with the letter cited, but not received here. Approval to the estimate for the work is held up for want of the above details

Dr. 11.8.53 12/8/53 13/8/53

14/8

To
The PEO. Mangalore

RD. 15 days.

Ref.C.No.1631/53-B.

Project Executive Office, S.Kanara,
Mangalore, d/- 17th August 1953.

*****

From

Sri G.Simhadri, B.A.,
Project Executive Officer,
Mangalore.

To 24641

The Director of Community Projects
and Ex-Officio Secretary to Govt.,
Fort St.George, Madras 9.

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Sir,

ACCOUNTS & SPECIAL CELL
(COMMUNITY PROJECTS)
22 AUG 1953
PUBLIC (CP) DEPARTMENT
MADRAS

Sub: COMMUNITY PROJECTS - South Kanara area - Block III - Communications - Formation of a road with bridge and culverts from Sanoor to Irvathur - Design calculations - Submitted.

Ref: Government Memorandum No. 23630, Public (C.P.Audit)/53-1, dated 13-8-1953.

*****

The design calculations referred to in the Government Memorandum cited are submitted in duplicate.

PROJECT EXECUTIVE OFFICER

Pub (Cp. Audit) Dep.

(C No 23630/58)

G.O. Ms. 2360 dated 3-9-53

Abstract:- Community Projects- South Kanara Area- Block III. Communications- Forming a Katcha road from Sanoor to Irvathur- Construction of 1 bridge and 12 culverts- Estimate- Sanctioned.

Read:- From the PEO. Mangalore ref C No 1631/53-B dated 17.8.53.

Orders:-

Sanction is accorded to an expenditure not exceeding Rs 10950/- (Rupees Ten thousand nine hundred and fifty only) towards the Cost of Construction of 5 culverts and 1 bridge on the road connecting Sanoor & Irvathoor in Karkal Taluk. The Cost of Construction of 7 other culverts ~~sanctioned vide G.O. Ms. 4150 dated 15.9.52~~ on this road of length 4 miles and 2 furlongs, ~~lying in the limits of the Panchayat boards of Irvathur and Sanoor should be met by the respective Panchayat boards and the villagers who should also bear the formation of the Katcha road at their Cost.~~ This Sanction is Counted against the provision in item II H. of the project estimate approved by the CPA in their letter No CPA 33/5/52 dated 31-3-53

2. The expenditure should be debited to "63B Community Development Projects- h. Civil works- Communications- works."

3. The PEO Mangalore should get the work executed according to the plans and estimate ~~for Rs 15,100~~, hereon the returns approved and submit a copy of the Completion report to Govt. in due course

28/8/53

29/8/53

29/8/53

To (By regd. post)
The PEO. Mangalore (with the enclosures)
The Accts. Madras
Copy to
The Secy. CPA. Rashtrapati Bhavan, New Delhi
The Collector South Kanara
The Inspection of Local Boards, Madras - 1.
Sri A Balakrishnan BABL, IA+AS, Accts. Madras
Pub (Cp. Accts) Dept
Pub (Cp. Tech.) Dept
St 2 — Put in S.F.
Spare 1

CB. 6 months — ✓
entered in C.B. as item no. 2108.

Bridge at 3/1-2 of Sawer Irrigation Road.

1) Hydraulic Calculations.

Catchment area (as per map alignment) : 1.5 sqmiles.

Bed level average — 41.00.
MWL (ascertained) 48.50
Top of bund at CS 2 ie 50 below the proposed site (CS3). } 49.37.

The depth of flow — 48.50 − 41.00 = 7'6"

$Q = CM^{3/3}{}' = 1000 \times 1\frac{1}{2}^{2/3} = 1310.$

Assuming a velocity of 6'/sec under the bridge waterway required $= \frac{1310}{6 \times 7\frac{1}{2}} = 29'1$

Hence two vents of 15'0 × 9'0 is provided.

The linear waterway at the CS. NO 1 and 2 ie at 50 and 100' below the proposed bridge site is only 35'0 and 24'0 (vide CSections furnished and plan). Hence the waterway proposed is quite sufficient.

The MWL is only approximate and the streams since have inundated the lowlands on either side and the fields at low regions were bunds on either side and the water has not passed over to the fields.

Calculation for afflux.

$$x = \frac{v^2}{2g}\left\{\frac{1.1L^2}{L_1^2} - 1\right\}$$

v = 6'/sec.
L = normal width of the stream = vents
L_1 = length of opening under bridge.

$$x = \frac{36}{64.4}\left\{\frac{1.1 \times 32^2}{30^2} - 1\right\} = 0.014.$$

Total depth including afflux = 7.5 + 0.014 = 7.514.

Hence the depth of 9'0 provided is quite sufficient.

2) Check for bearing Capacity of Soil - under pier

Impact factor $= \frac{15}{20+L} = \frac{15}{20+15} = 0.43$

Allowing IF of 0.43.

Live load on pier	25000 × 2 × 1.43	31.63 tons
Self weight of pier	1 × 19 × 4-6 × 1-6 × 140 lbs.	8.00 "
" "	1 × 18 × 3-6 × 1-6 × 140 "	5.90 "
" "	1 × 18-0 × 2-6 × 11-0 × 140 "	27.50 "
" "	1 × 16-0 × 2-6 × 11-0 × 140 "	14.20 "
Deck slab	1 × 13.5 × 15 × $\frac{15\frac{1}{4}}{12}$ × 150 "	3.16
Wearing Coat	1 × $\frac{3}{12}$ × 15 × 13.5 × 140 "	15.40
Concrete	1 × 20-6 × 6-0 × 2 × 140 "	3'5
		108.79 tons

Bearing area = 20-6 × 6 = 123 sqft.

Load per sq foot = $\frac{108.79}{123}$ = 0.89 tons

against 2 to 3 tons in sandy gravelly ground.

PTO

3) Check for masonry pier at top footing

To Total load acting = 79.49 tons

Bearing area $1.5 \times 2.5 = 3.75$

$\therefore$ Pressure $= 79.49/3.75 = 21$ tons

against 6 tons on sandstone rubble (granite) in cement mortar.

4) Depth of foundation $\frac{w_1}{w_1} = \left(\frac{1-\sin\phi}{1+\sin\phi}\right)^2 = \frac{w_2}{w_1}\left(\frac{1-\sin\phi}{1+\sin\phi}\right)^2$

$\phi = 20°$ and $w_1 = 100$ lbs.

$\frac{0.89 \times 2240 \times 0.45}{100} = 4.88'$

Assume min depth of foundation below average GL as finished scale

5) R/C Deck slab

No separate design furnished. Abutments of 15½" provided as in details of slab for RC Arches loading for a span of 15' to 12 ton units.

R/C Standards - as per Drawing No 45/50 SE(BD) No 10.

SE (H) Memo No 2287/C&B D(9)/C&B.

7) Abutment: Top thickness 2-6

Below 0.5H = 6'-6"

Return top 2-6

" bottom 0.6H = 4-6"

1 copies

[signature]

4.7.53

[signature]

[signature]

30.7.53

AE Cp.

BRIDGE AT 3/1-2 OF SANUR IRRTHUR ROAD.
****

1) Hydraulic calculations:

Catchment area (as per map attached) 1.5 square miles.
Bed level average. 41.00
M.W.L. (ascertained) 48.50
Top of bund at CS2 i.e. 50 below in proposed site (CS3) 49.37
The depth of flow. 48.50 - 41.00 = 7'-6".

$Q = CM\text{-}2/3 = 1000 \times 1\text{-}2/2^{2/3} = 1310$..

Assuming a velocity of 6'/sec under the bridge linear waterway required $= \frac{1310}{6 \times 7\text{-}1/2} = 29.1$

Hence two vents of 15-0 x 9-0 is provided.

The linear waterway at the C.S.No. 1 and 2 i.e. at 50 and 100' below the proposed bridge site is only 35'-0 and 24'-0 (vide C.sections /furnished finished/in the plan) Hence the water way proposed is quite sufficient.

The M.W.L. is only approximate and the stream is running between fields at low reaches with bunds on either side and the water has not passed over to the fields.

Calculation for afflux.

$X = \frac{V^2}{2g}\left(\frac{1.1\,L^2}{L_1^2} - 1\right)$ V = 6 l/sc.
L = Normal width of the stream.
L_1 = Length of opening under

$X = \frac{36}{64.4}\left(\frac{1.1 \times 32^2}{30^2} - 1\right) = 0.014$

Total depth including afflux = 7.5 +0.014 = 7.514
Hence the depth of 9'-0 provided is quite sufficient.

2. Check for bearing capacity of soil - under pier.

Impact factor $= \frac{15}{20 + L} = \frac{15}{20 + 15} = 0.43$

Allowing I.F. of 0.43

line load on pier.	25000 x 2 x 1 43	31.63 tons.
Self wt. of pier.	1 x 19 x 4-6 x 1-6 x 140 lbs.	8.00 tons.
"	1 x 18 x 3-6 x 1-6 x 140 "	5.90 tons.
"	1 x 16 x 2-6 x 11-0 x 140 "	27.50 tons.
Deck slab.	1 x 13.5 x 15 x $\frac{15\text{-}1/4}{12}$ x 150	17.20 tons.
Wearing coat.	1 x $\frac{3}{12}$ x 15 x 13.5 x 140	3.16
Concrete.	1 x 20.6 x 6-0 x 2 x 140	15.40
		108.79 tons.

Bearing area = 20-6 x 6 = 123 s.ft.
Load per Sq.foot $\frac{108.79}{123}$ = 0.89 tons.

Against 2 to 3 tons in sandy gravel or kankar.

3) Check for masonry pier at top footing.

Total load acting. 79.49 tons
Bearing area. 15 x 2.5 37.5
per sq.ft. 7949/37.5 = 21 tons

Against 6 tons over random rubble (granite) in cement mortar.

p.t.o.

/2

4) Depth of foundation. $\frac{W}{w}, \left(\frac{1-\sin\phi}{1+\sin\phi}\right)^2$

$\phi = 20°$ and $wt = 100$ lbs.

$$\frac{0.89 \times 2240 \times 0.245}{100} = 4.88'$$

Hence the depth of 6'-0 below average B.L is quite sute.

5) R. C. deck slab.

No separate design is furnished. A thickness of 15-1/4" is provided as per details of slab for 1 R.C. A. class loading for a span of 15'-0 in with R

6) R.C. Hand rails - as per plan No. 45/50 S.E. (B.D.) No. 10 S.E.(H) Memo.No. 2287/49 dated 9-9-1949.

7) Abutment.

top thickness.	2-6		
bottom.	0.54	=	6'-6"
top.	2-6		
bottom	0.4H	=	4-6"

& = A - Ga = for
30/3/53.
AE Cl

13

District Construction of a Bridge at 3/1-2 of Sarem Dravidian Taluk

Village and Survey. Revery Date and cost of original construction

Name and number of work Date and cost of last repairs

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
1. Earth work excavation in all soils excepting rock requiring Blasting						
Abutments	1×2	19-6	8-0	8-0	2496	
Returns	2×2	3-6	6-0	8-0	672	
Piers	1	20-6	6-0	7-0	861	
				Total.	4029	or 4100 cft
2. Concrete broken stone in Cement mortar 1:4:8.						
For abutments.	1×2	19-6	8-0	2-0	624	
Returns	2×2	3-6	6-0	2-0	168	
Piers.	1	20-6	6-0	2-0	246	
				Total.	1034	or 1050 cft
3. Random rubble masonry in Cement mortar 1:4.						
Abutment 1st footing	1×2	18-0	6-6	2-0	468	
2 "	1×2	18-0	5-9	2-0	414	
3 "	1×2	18-0	5-0	2-0	360	
4 "	1×2	18-0	4-3	2-0	~~296~~	306
5th "	1×2	18-0	3-6	2-0	252	
6th "	1×2	18-0	3-0	2-10	216	
7 "	1×2	18-0	2-6	1-6	135	
Returns 1st footing bell	2×2	3-6	4-6	2-0	126	
2nd "	2×2	3-9	4-0	2-0	120	
3rd "	2×2	4-6	4-0	2-0	144	
4th "	2×2	4-9	3-6	2-0	133	
5th "	2×2	5-6	3-6	2-0	154	
6 "	2×2	6-0	3-0	2-0	144	
7 "	2×2	6-6	2-6	3-0	195	
extra slab bell	1×2	18-0	0-9	1-3	34	
Pilasters	4×2	2-0	2-0	2-6	~~80~~ 80	
~~Coping~~	~~2×2~~	~~2-6~~	~~2-6~~	~~0-6~~		
Parapet	2×2	4-6	1-6	2-6	68	
Piers	1	19-0	4-6	1-6	128	
~~Coping~~	~~2×2~~	~~4-6~~	~~3-6~~	~~0-6~~	99	
top	1	18-0	3-6	1-6	394	
Cutwater	2	15-0	2-6	10-6	52 38	
		22 1-3 1-3 / 7 2		× 10-6 solid		
				Total.	4050 cft.	
4. Concrete broken stone in Cement mortar 1:2:4 using 3/4" metal						
top of abutment	2	18-0	2-6	0-6	45	
pier	1	15-0	2-6	0-6	19	
Coping of pilasters	4×2	2-6	2-6	0-6	25	
" parapet	2×2	4-6	2-0	0-6	18	
Wearing Coat	1	35-6	12-0	0-3	107	
				Total.	214	or 220 cft

4050 cft or 4000.

(P.T.O.)

C.F. 159 (11)

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
5. Reinforced Cement Cement rising 3/4" metre 1:2:4						
for directing	1	35-6	13-6	0-15/4	609.0	
kerbs	2	32-6	1-0	0-9	48.75	
Posts	8×2	0-7	0-5	4-9	18.50	
Railing	2×2	32-6	0-5	0-6	27.08	
				Total	703.33	or 704 cft
b) Plastering with Cement mortar 1:4. ½" thick						
for pier arches	4×2	8-0	2-6		160	
parapet	2×2	4-6	6-6		117	
extras if required			Le		+23	
				Total	300 sft	
7 Rangoon stone dry packing for revetment						
Quadrants	1×4	$\frac{22}{7}$ ×	$\frac{8-0}{4}$	$\frac{10-0}{2}$ × 10	126	
Straight parts	2×2	20-0	8-0	1-0	640	
for for wall	2×2	20-0	1-6	1-6	180	
in Quadrs	1×4	$\frac{22}{7}$ × $\frac{8-0}{4}$ × 1-6		× 1-6.	94	1100 cft
extras if necessary				Le	47	
					1050 cft	
					= H.W.	
8. Extra for any curved items of work such as taking out walls etc					Le	
9. Extra for forming the approach roads on either side in embankment					Le —	
10. Petty compensation and Contingencies					Ls —	

S Saunders
8.7.33
Inspector C.P. Mully

P.W.D. V.—39—1,54,550—20-5-53.

Data sheet to accompany the estimate for Constructing a Bridge at 2/1-2 of Salem Dharmapuri Road.

Quantity	Description of work.	Rate.	Per.	Amount.	Total.
	1) Earthwork excavation in all soils excepting rocks requiring blasting when within lead of 2 furlongs	Rs. A. P.		Rs. A. P.	
1000 cft	as per S.O.R.	21 6 -	1000 cft	21 6 -	
	2). Cement mortar 1:4		40 cft		
1000 cft	Sand	2 8 -	1000 cft	2 8 -	
25 cft	Cement	87 8 -	1 bag	87 8 -	
		82 15 8		20 11 11	
low ~~1000~~	~~Sand~~	~~2 8 -~~	~~1000~~	~~20 11 11~~	
25	Cent. 30 MNR 3 MCT ... by Cat ... 4:1.	91 7 -	1000	22 13 9	
1000 cft	Carriage Charges.	4 8 -	"	4 8 -	
	Sundries		4%	~~2 3~~	115-8-0
				~~116 8~~	~~116-0-0~~
	Note: Sand available at site; Item no lead given.				
	3.) Concrete broken stone in Cement mortar 1:4:8.				
100 cft	metal 1½" size.	23 - -	100 cft	23 - -	23-0-0
58 cft	mortar 115-8-0	~~116~~ 58	"	~~58~~	57-12-0
½ hp	Mason 2nd Class	2 12 -	each	1 6 -	1-6-0
5 hp	Man Coolie.	1 8 -	"	7 8 -	7-8-0
4 hp	Woman "	0 12 -	"	3 - -	3-0-0
100 cft	metal 1½" lead load.	3 10 -	100 cft	3 10 -	3-10-0
	Sundries		4%	~~4~~	99
				99 - -	96-8-0 / 100 cft.
	4). Random rubble masonry in CM 1:6.				
110 cft	Rough stone	16 - -	100 cft	17 9 7	
34 cft	Mortar 115-8-0	~~116~~ 58	"	~~59~~	39-2-7
5 hp	Mason 2nd Class	2 12 -	each	13 12 -	
4 hp	Man Coolie.	1 8 -	"	6 - -	
4 hp	Woman "	0 12 -	"	3 - -	
110 cft	lead as above	3 10 -	100 cft	3 15 9	
	Sundries		4%	~~4 8~~	83-12-0
				~~83 8~~	~~83-8-0~~
	5. Concrete broken stone in Cement mortar 1:2:4				
96 cft	metal 3/4" size ...	42 - -	100 cft	40 5 1	
48 cft	Sand	2 8 -	"	1 3 3	
2 bag	Cement	87 8 -	1 bag	84 - -	
1 hp	Mason 2nd Class	2 12 -	each	2 12 -	
6 hp	Man Coolie.	1 8 -	"	9 - -	
10 hp	Woman "	0 12 -	"	7 8 -	
96 cft	lead as above	3 10 -	100 cft	3 7 7	19-14-7
2 bag	Cement	~~91 7 -~~	"	~~29 15 8~~	0-5-5
	Sundries	82 15 8	4%	~~1 8~~	
				170 4 -	170-4-0 / 100 cft.
				168 8 0	

16

P.W.D. 7—53—1,54,250—25-V-53

Data sheet to accompany the estimate for

Quantity.	Description of work.	Rate	Per.	Amount.	Total
b)	R.C. work in slab post etc	Rs. A. P.		1:2:4 Aggregate 3/4" metal.	
1 cft.	Cement	168 0 0	100 ft	1 11 0	1-11-0
6.25 lbs	Steel. SD No.	170 4 -	cwt.	2 9 6	1-1-10
1 sh	Centering SD No.	20 9 0	1 sh	- 12 3	0-12-3
6.25 lbs	Extra for Cutting steel	- 12 3	cwt	0 7 -	0-6-3
	& fixing in position etc	7 0 0	lb	- 7 1/2	0-4-8
	Conveyance of steel etc			5 4 -	4-4-0
				5 11 81	
7.	Plastering inner Cement work	1/6 - 1/2" thick			
5 cft	Cement 1558	116 8 1/2	100	5 11 5	5-12-5
1 no	Beldar Layer 2 Nos	2 12 -	each	5 13 3 1/2	
1/2	Clean Ledgoor.	1 8 -	"	2 12 -	
1 no	Woman "	0 12 -	"	0 12 -	
	Sundries			3 2 0 3	
				10 2 =	10/4
8)	Rangheloine dry packing for revetment.				
100 cft	Rangheloine	16 - -	100 cft	17 9 7	
3 no	Head Mazdoor.	1 8 -	each	4 8 -	
2 no	Woman "	0 12 -	"	1 8 -	
1 no	Woddar.	3 0 -	"	3 0 -	
100 cft	Lead as above	3 10 -	100 ft	3 15 9	
	Sundries		12 -	- 6 8	
				31 - -	/100 cft

Certified that the rates are lead rates above Cement to best of my knowledge

Sundries
3.7.53
Inspector of Works

9. Forming road in embankment including Consolidation sanding etc complete

1000 cft	Excavation SS 208	21 6 -	1000	21 6 -	
	Extra lead 2 leads.	1 2 -	"	2 4 -	
	Breaking clods Consolidation etc	1 1 -	1000	1 1 -	
	Sundries			5 -	
				25 - -	/1000 cft

Sundries
3.7.53

H. N. Gupta
8/7/53

Constructing a Bridge at 3/1-2 of Sanem Invamin Road. 17

ESTIMATE FORM—Abstract.

Item number. (1)	Quantity. (2)	Description of work. (3)	Rate. (4)	Per (5)	Amount (6)	Total. (7)
		Earth work excavation in all soil except rock requiring blasting with mixed coolie	RS. 21-6-0	1000 ft	RS. 88	RS. 88
	1050 ft	Cancle broken stone in C.M. ratio 1:4:8.	96-8-0	100 ft	1019	1013
4050	4050 ft	Random rubble masonry in Cement mortar 1:4	84/-	Do.	3380	3380
	220 ft	Cement in Cement mortar 1:2:4 using 3/4" metal	168-8-0		371	371
	70 ft	R.C. Concrete using 3/4" metal 1:2:4	5/-	c.ft	299	299
	3000 ft	Plastering with Cement mortar 1:4 - 1/2" thick	10/4	100 sft	31	31
	1050 ft	Rough stone dry packing for revetment	31/-	100 ft	326	326
	L.S.	Extra for any enforcement work such as balcony, parapet wall etc.	— L.S. —		174	179
	L.S.	Extra for forming approach road in embankment consolidation etc.	— L.S. —		200	200
	L.S.	Petty contingencies and Contingencies	— L.S. —		450	420
				Do tal.	9850	9000
					9800	

47.53
Superintending Engineer.

2-A.E. 8/7/53

Grand Total of Estimate ..

STATION _____

Date _____ 194

Executive Engineer,

Constructing a Bridge at
3/1-2 of Sanur Irrawan Road.
Cost Rs ~~9250/-~~ 9000/-

DETAILED ESTIMATE.

421,104—17-11-52. C.F. 160 (1).

District - forming a road from Dharwar Taluk to Sangur -

Village and Survey (Commencing from 2/1.2 of Belwai Road and joining at 29/4 of Kankar Road). **Date and cost of original construction**

Name and number of work Earthwork only **Date and cost of last repairs**

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
1) Earthwork excavation in all soils excepting rock requiring blasting for Cutting drain 0/0 to 0/1	1×2	660-0	2-0	1-0	2640	
" 0/1 to 0/2	1×2	660-0	2-0	1-0	2640	
" 0/2 - 0/3	1×2	660-0	2-0	1-0	2640	
" 0/3 - 0/4	1×2	660-0	2-0	1-0	2640	
" 0/4 - 0/5	1×2	660-0	2-0	1-0	2640	
" 0/5 0/6	1×2	660-0	2-0	1-0	2640	
" 0/6 - 0/7	1×2	660-0	2-0	1-0	2640	
" 1/0 - 1/1	1×2	660-0	2-0	1-0	2640	
" 1/1 - 1/2	1×2	660-0	2-0	1-0	2640	
1/2 - 1/3 Cutting	1	660-0	3-0	0 6	990	
drain 1/2 - 1/3	1	660-0	2-0	1-0	1320	
1/3 - to 1/3+100	1	100-0	3-0	4-0	1200	
1/3+100 to 1/4	1	560-0	2-0	1-0	1120	
1/4 to 1/5 drain	2	660-0	2-0	1-0	2640	
1/5 - 1/6 "	2	660-0	2-0	1-0	2640	
1/6 - 1/7 "	2	660-0	2-0	1-0	2640	
1/7 - 1/2+300	1×2	300-0	4-0	2-0	4800	
1/2+300 to 2/0	1	360-0	4-0	2-0	2880	
2/0 to 2/1	2	660-0	3-0	2-0	7920	
2/1 to 2/2	1	660-0	3-0	2-0	3960	
2/2 2/4	2×2	660-0	2-0	1-0	5280	
2/4 to 3/4+400	1	400-0	2-0	1-0	800	
2/4+400 to 2/5	1	260-0	4-0	2-0	2080	
2/5 to 3/0	2×3	660-0	2-0	1-0	7920	
3/0 to 3/1	1	660-0	2-0	1-0	1320	
3/1+330 to 3/2	1	330-0	18-0	3-0	17820	
3/2 to 3/3	1	660-0	18-0	2-0	23760	
3/3 to 3/4	1	660-0	8-0	1-0	5280	
3/4 to 3/5	1	660-0	2-0	1-0	1320	
					124090	

60.

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
					0.5	
from 3/5 to 3/6	1	660-0	2-0	1-0	1320	
3/6 to 3/7	1	660-0	2-0	1-0	1320	
3/7 to 4/0	1	660-0	2-0	0-6	660	
4/0 to 4/1	1	660-0	4-0	3-0	7920	
4/1 to 4/2	1	660-0	2-0	1-0	1320	
	1	200-0	6-0	4-0	4800	
					14430	
Add 10% extra for any Ceiling required					1443	
					15873	
					156000	or 15 lamb units.

2. Excavating for road including grubbing necessary Cambers and Ceiling 3" deep & Complete from 0/0 to 4/2 — 36 — 660-0 — 18-0 — 403920 — or 4039 lamb units

3. Forming new road in lamb enclosure including Consolidation and necessary Excavating Cavalling Cleats

from 3/0 to 3/1	1	660-0	18-0	6-0	71280
3/1 to 3/2	1	360-0	18-0	6-0	38880
					9840
Extra if found necessary					120000 — or 120 lamb units

4. Extra for any unforseen items of work such as Ceiling in rocks, additional lead, lifts, etc. — 15 —

Shanklin
28.6.53 Inspector of Roads

Data

1) Earth work excavation in all soils excepting rock requiring blasting
10000 c/ft. 8920 — 21.60 — 10000 — 21.60

2) Excavating new road to Cambers filling pits including Ceiling 3".
10000 c/ft. 8250 — 0.46 — 10000 — 0.46

3. Earth cradle excavation in hard gravelly Soil and Disintegrated rock
10000 c/ft. 5000 — 23.40 — 10000 — 23.40

4. Earth work in Soft-Disintegrated rock
10000 c/ft 817 — 28.140 — 10000 — 28.140

5. Lead for every additional ten yards or part thereof.
over first ten yards — 1-2-0 — 10000 c/ft

Excavating Cleats Consolidation & Excavating
10000 c/ft. 2120 — 0.4-0 / 1.4-0 / 2.8-0 ÷ 2 = 1.4-0 : 10000 c/ft

I hereby certify that the rates and leads stated above are correct to the best of my knowledge and belief.

Shanklin
28/6/53 Inspector of Roads

1 - A - 15
8) 15
AEC

ESTIMATE FORM—Abstract.

Item number. (1)	Quantity. (2)	Description of work. (3)	Rate. (4)	Per (5)	Amount (6)	Total. (7)
		Earth work excavation in ordinary soils excepting rock requiring blasting with initial lead and lifts.	RS.		RS.	RS.
1556 cubic			2.60	1 cubic	3335	
		Sectioning the road including grading necessary to be done complete.				
4039 cubic		3rd lineal etc complete.	0.06	do	1135	
		Forming road in embankments including consolidation and breaking clods, ~~Ceiling in laterite or~~ sectioning ~~hard soil in rock and for any additional~~ lead if required.				
120 cubic			1.10	1 cubic	128	
L.S.		~~lead if required.~~				
L.S.		Extra for unforseen items of work such as ceiling in laterite or in hard soil rock and for any ~~unforseen~~ additional lead if required.	L.S.		1401	
					6000	

28/6/53
Superintendent Overseer

L. A. Gangam
8/7/53
A.E. GP

DETAILED ESTIMATE. 421,104—17-11-52. C.F. 160 (1).

District Constructing a Pipe Culvert No 1 in **Taluk**

Village and Survey at 0/0 (2½ of Belluvai Road) of Irua kin Samm Road. **Date and cost of original construction**

Name and number of work **Date and cost of last repairs**

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
1. Earth work excavation in ordy soils excepting rock requiring blasting						
for headwalls	1×2	6·6	2·6	3·0	98	
sides	1×2	1·6	2·6	3·0	23	
bench	1	21·0	2·0	1·6	63	
extra for lowering in top stratum				4	116	
					300 cft.	
2. Coursed rubble stone in Cement mortar 1:5						
Headwalls.	1×2	6·6	2·6	1·0	33	
4 return	1×2	1·6	2·6	1·0	8	
					41 or 45 cft	
3. Random rubble masonry in Cement mortar 1:5						
Headwalls	1×2	5·6	1·6	3·0	50	
sides	1×2	1·6	1·6	3·0	14	
Coping	1×2	6·6	1·0	0·9	10	
					74 or 80 cft	
4. Supplying and fixing RC Stone pipe 1' dia with necessary Collars etc complete.						
pipe	1	21·0			21 Rft	
5 Plastering with Cement mortar 1:3 ½" thick						
exposed headwalls	2	5·6	5·0		55	
wends	2	1·6	3·0		9	
extras					36	
					100 sft.	
6. Extra for any unforseen items of work.					L.S.	

Estimate
20 CO

Data

1) Earth work excavation in ordy soil excepting rock & gravel etc
1000 cft 20 B- 21·6·0 1000 cft 21·6·0

2) Cement mortar 1:5
100 cft sand 2·8·0 100 cft 2·8·0
20 Cement 87·8·0 1 Ba 70·0·0
Lead 100 cft sand 1 M MR. 7·0·6 100 cft 7·0·6
20 cft Cent 30 M MR. 75·12·6 Do - 15·2·6
Via Belluvai
100 cft metric Grants 4·50 " 4·5·0
0·1·0
transferring
99·4·0

20 CO

24 ✓

C.F. 150 (1)

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
3. Concrete Golden stone in Cement mortar 1:5:10.						
100 cft metal 1½" Size	-	23.0.0	100 cft	23.0.0		
50 cft mortar		99.4.0	"	49.8.0		
½ No Mason 2nd Class		2.12.0	each	1.6.0		
5 Nos Man Labourer		1.8.0	"	7.8.0		
4 " Woman "		0.12.0	"	3.0.0		
100 cft Less 2% hand loose Sundries		6.14.0	100 cft	6.14.0		
			Ls	0.2.0		
				91.8.0		
4) Random rubble masonry in Cement mortar 1:5						
110 cft Local Stone		45.0.0	100 cft	17.9.7		
34 cft Cement mortar		99.4.0	"	33.11.11		
5 Nos Masons 2nd Class		2.12.0	each	13.12.0		
4 " Man Labourer		1.8.0	"	6.0.0		
4 " Woman "		0.12.0	"	3.0.0		
110 cft Less as above		6.14.0	100 cft	7.9.0		
Sundries			Ls	0.1.6		
				81.12.0	✓	
5) Plastering with Cement mortar 1:5 - ½" thick						
5 cft Cement mortar		99.4.0	100 cft	4.11.7		
1 Bricklayer 2nd Class		2.12.0	each	2.12.0		
½ Man Labourer		1.8.0	"	0.12.0		
1 Woman "		0.12.0	"	0.12.0		
Sundries			Ls	0.0.3		
				9.0.0		
6) Supplying and fixing R.C. Frame fitted with Concave Cantilever Gratings complete.						
1 Rft - as per Company rate		1 B'class non Standard lengths		3-12-0		
1 Coolvert A - -		3-12-0	1 Rft	3-12-0		
2 Cellars for the culvert @ ½0 for a Rft		0.1.56	each	0-3-2		
Le for Conveyance including Carry fingual which works out to 2-8-0 as per Company Rate			Ls.	2-8-0		
Sundries			Ls.	0.4.10		
				8.0.0	Rft	6.12-0 Rft

Certified that the rates and leads noted above are correct to the best of my knowledge.

28/6/53

Inspecting Officer

A. A. Campaore
8.7.53
A.E. S.A.

Abstract Estimate.

P.W. 180 (a).

Quantity. (1)	Description of work. (2)	Item number in the schedule of rates. (3)	Rate. (4) Rs.	A.	P.	Per (5)	Total. (6) Rs.	A.	P.	Amount. (7) Rs.	A.	P.
300 cft.	Earth work excavation in all soils except rock requiring blasting		21	6		1000 cft.	7	-	-			
45 cft.	Cement broken stone lime Cement concrete 1:5:10		91	8		1000 cft.	38	-	-			
80 cft.	Random rubble in masonry in C.M. mortar 1:5		81	12		100 cft.	66	-	-			
21 lbs.	Supplying and fixing R.C. hume pipes 1'0" dia		6 ~~8~~	12	0	1 Rft.	142 ~~168~~					
1000 sq. ft.	Plastering with Cement mortar 1:6 ½" thick		9	-	-	100 sq. ft.	9	-	-			
Ls.	Extra for any contingent items if needed						8 ~~12~~	-	-			
							~~300~~ 270					
	Supervision charges at 5 per cent											

Grand Total Estimate ..

Divisional officer (or other countersigning officer to be named).

Sanctioned for 194 –194 .

Signature and designation of the officer submitting this estimate.

Collector or other sanctioning officer (to be named).

Tahsildar or other officer (to be named).

Construction of pipe Culvert 1-6" dia at 0/1.2, 0/5+300 and 0/6+100 of Bannur Arvalkuri road

DETAILED ESTIMATE. 421,104—17-11-52. C.F. 150 (1).

District Taluk

Village and Survey 3M5 **Date and cost of original construction**

Name and number of work **Date and cost of last repairs**

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
1. Earth work excavation in all soils excepting rock requiring blasting						
Headwalls	1×2	6-6	2-6	4-0	136	
Catchpit	1	3-6	4-0	4-0	56	
Trench	1	15-0	2-0	2-0	60	
Extras			15	—	154	
					406 cft.	
2. Cement Rubble masonry in Cement mortar 1:5:10.						
Headwalls.	1×2	6-6	2-6	1-0	33 cft.	
3. Random rubble masonry in Cement mortar 1:5.						
Headwalls	2	5-6	1-6	3-6	58	
top Coping	2	5-0	1-0	0-9	8	
Catchpit	1	9-0	1-0	1-6	14	
Rodican	1	3-0	4-0	1-0	12	
					92 or 100 cft	
4. Supplying and fixing RC Heavy pipes with Collars etc complete.						
1-6" dia pipe.	1	1.50			1.5 Rm	
5. Plastering with Cement mortar 1:5. ½" thick.						
Upstream Downstream	2	5-6	5-0		55	
Extras				15 —	45	
					100 sqft	
6. Rough stone dry packing for revetment.						
Revetment	1	5-0	5-0	1-0	25 cft	
7. Extras for any unforeseen items of work.					— 15 —	

Recorded
28-6-53

Date

1. Earthwork excavation in all soils excepting rock requiring blasting
1000 cft 28-6-53 21.60 1000 cft 21.60

2) Cement mortar 1:5

100 cft sand	2.80	100 cft	2.80	
20 cft Cement	87.80	1 Ton	70.0.0	
Lead 100 cft Sand 1 MAR 4 FCT (Average of 3 Culverts)	9.56	100 cft	9.56	
	76.15.8		15.64	Rs
20 cft Cement 30 MAR ½ MCT	78.20	"	17.00	
100 cft rubble Masonry	4.80	"	4.80	
Lead			0.02	101-120
			104	Rs

To

C.F. 160 (1)

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
3) Concrete broken stone in	Cement mortar			1:5:10		
100 cft metal 1½" Gauge.		23·0·0	100 ft	23·0·0		
50 cft mortar.		101-12-0	do.	50-14-0		
½ no leaser 2nd Class.		2·12·0	each	1·6·0		
5 no lean labourer.		1·8·0	"	7·8·0		
4 no Woman "		0·12·0	"	3·0·0		
Less 100 cft metal & labour		6·100	100 ft	6 100		
Sundries			lbs	0·3·0		
				94·0·0	92-12-0	
4) Random rubble masonry in Cement mortar 1:5						
100 cft Penghaine.		16·0·0	100 cft	17·9·7		
36 cft mortar.		101-12-0	"	25·5·9	34-9-6	
5 no leaser 2nd Class		2·12·0	each	13·12·0		
4 no lean labourer.		1·8·0	"	6·0·0		
4 no Woman "		0·12·0	"	3·0·0		
Less 100 cft as above		6·100	100 ft	7·9·0		
Sundries			lbs	0·3·4		
				82·8·0	82-12-0	
5 Plastering with Cement mortar	1:5	½	Coats			
5 cft mortar.		101-12-0	100 ft	5·1·5		
1 Brick layer 2nd Class		2·12·0	each	2·12·0		
½ lean labourer.		1·8·0	"	0·12·0		
1 Woman "		0·12·0	"	0·12·0		
Sundries			lbs	0·2·5		
				9·8·0	9-8-0	
6. Supplying and fixing R.C. Stone pipe 1 Ft pipe B'ham Standard Cast Iron Collars and Sockets complete.		7·15·6	1 Rft	7-15-6	Compensate	
		7·1·0		7-1-0		
		4·3·6	each	4-3-6		
Cellar for culvert at 15 feet. 1/15 Cement				0-4-6		
Carriage including fuel as per Contract	Rail		lbs	3·0·0		
	"	3·10	Cwt	2·80		
				0·4·0	11/8/0	
Sundries				14·00	/Rbr	
7. Random rubble dry packing for Abutment.						
100 cft Rubble		16·0·0	100 cft	17·9·7		
3 no lean labourer		1·8·0	each	4·8·0		
2 no woman		0·12·0	"	1·8·0		
1 Waddar.		3·0·0	"	3·0·0		
100 cft as above		6·100	100 cft	7·9·0		
Sundries				0·5·5		
				34·0·0		

Certified that the rates and Cards are correct.
Contract to be Carried out by Contract.

H Saunders Mg
28/6/13
for Permit & Valley.

H. A. Company
8/2/16
A.E.

Abstract Estimate.

S.F. 186 (a).

Quantity. (1)	Description of work. (2)	Item number in the schedule of rates. (3)	Rate. (4)	Per (5)	Total. (6)	Amount. (7)
400 cft	Earth work excavation in the pits for the foundation of piers & abutments		Rs. A. P. 21 6 -	100 cft	Rs. A. P. 9 - -	Rs. A. P.
33 ch	Cement concrete stone in C.M. 4th 1:5:10		96 - -	100 cft	31 - -	
10 ch	Random rubble masonry in Cement mortar 4th 1:5		33 8 -	4	84 - -	
5 Rh	Supplying & erecting RC Hume pipes 1 6" dia		11 8 0	1 Rft	173 ~~210~~ - -	
100 sft	Plastering with C.M. 1:3		6 8 -	100 sft	10 - -	
2.5 ch	Random rubble masonry in C.M. 1:5 in foundation		34 8 -	4	9 - -	
Ls	Extra for any sundries works				14 ~~27~~ 1 - -	
					~~250~~ 330 - -	

Supervision charges at 5 per cent

Grand Total Estimate ..

Divisional officer (or other countersigning officer to be named).

Sanctioned for 194 –194 .

Signature and designation of the officer submitting this estimate.

Collector or other sanctioning officer (to be named).

Tahsildar or other officer (to be named).

DETAILED ESTIMATE. 421,104—17-11-52. C.F 150 (1).

Construction of box Culverts at 0/0 to 0/0
4/1-2, 4/5 to and 2/1-2 with Cuttaing slabs
for the same in Kms

District Taluk

Village and Survey Date and cost of original construction

Name and number of work Date and cost of last repairs

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
1) Earth work excavation in all soils except rock requiring blasting						
- foundation	1×2	16-0	3-0	3-0	288	
returns	2×2	2-0	3-0	3-0	72	
Extra for lifting					40	
					400	cft
2. Concrete Cordon slabs in Cement mortar 1:5:10						
- foundation	2	16-0	3-0	1-0	96	
returns	2×2	2-0	3-0	1-0	24	
					120	cft.
3. Random rubble masonry in Cement mortar 1:5						
abutments	1×2	15-0	16+2.0 / 2	3-6	154	
returns	2×2	3.6+2.0	1.6+2.0 / 2	3-6	68	
Parapets	1×2	10-6	1 1/2	2-0	53	
Extra length returns	4	4-0	1-3	0-6	20	
Copings	1×2	10-0	1-0	0-9	15	
					330	or 340 cft.
4) Plastering with Cement mortar 1:5 1/2 thick						
Flat slab	2	11-6	7-0		147	or 150 Sft
5. Fixing in slabs	1	15-0	4-6	0-6	34	cft.
6. Providing and fixing in cement mortar						
Coping	1×2	8-0	1-0	3-9	96	or 100 cft
7. Fixing in returns Cordon returns Coping slabs					60	
Excavation in all soils except rock requiring blasting						
1 per Sft	33 2 cft	21-6	Normal	21-6		
2. Cement mortar (1:5)						
Loose dry sand		2.20	Normal	2.20		
20 cft Cement		80.0	1.25	Normal		
Load Proof 1 1/2 MCT. for same Lead		11.40	coach	11.40		average lead for Culverts 11 Kms.
20 cft Cem 20 MM 1 MCT average		78-12-11 / 84-36	Do -	15-10-2 / 16-12-6		
Inserting Rivets		6.80	Do -	6.80 / 0-1-10 / 0-0-6		
Sundries				10.72 / 104-00		

0.70

C.F. 160 (1)

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
3. Concrete bottom slabs in Cement mortar 1:5:10.						
100 cft. metals 1½" Bgg.		23.0.0	100 ft	23.0.0		
50 cft mortar	104.00	[illegible]	"	52.0.0		
½ ms labour 2nd class		2.12.0	each	1.6.0		
5 ms. labourers		1.8.0	"	7.8.0		
4 ms. Woman "		0.12.0	"	3.0.0		
100 cft lead of materials		6.14.0	100 ft	6.14.0		
Sundries				0.4.0		
				94.0.0	94-0-0	
4) Random rubble masonry in Cement mortar 1:5						
110 cft Rangbislane		16.0.0	100 ft	17.9.7		
34 cft mortar.	104.0.0	[illegible]	"	[illegible]	35-5-9	
5 ms masons 2nd class		2.12.0	each	13.12.0		
4 ms labourers		1.8.0	"	6.0.0		
4 ms Woman "		0.12.0	"	3.0.0		
110 cft lead as above		6.14.0	100 ft	7.9.0		
Sundries				0.3.8		
				84.0.0	83-6-0	
5) Cubstone work in arch	1 cft 274.	3.8.0	1 ft	3.8.0		
6. Plastering with Cement mortar 1:1½ ½" thick						
50 cft mortar.	104.0.0	[illegible]	100 ft	5.2.7		
1 Brick layer 2nd class		2.12.0	each	2.12.0		
½ labourer		1.8.0	"	0.12.0		
1 Woman "		0.12.0	"	0.12.0		
Sundries			Ls.	0.1.5		
				7.8.0	9-8-0	
7. Rangbislane dry pitching for revetment						
110 cft Rangbislane		16.00	100 ft	17.9.7		
3 ms labourers		1.8.0	each	4.8.0		
2 ms Woman "		0.12.0	"	1.8.0		
1 ms Woman		3.8.0	"	3.0.0		
110 cft lead as above		6.14.0	load	7.9.0		
Sundries		Ls		0.5.5		
				34.8.0		

Certified that the rates and loads noted above are correct to the best of my knowledge

[illegible]
12 & 6 6
Asst Engr

33

Abstract Estimate.

P.W. Form (21).

Quantity. (1)	Description of work. (2)	Item number in the schedule of rates. (3)	Rate. (4)			Per (5)	Total. (6)			Amount. (7)		
			Rs.	A.	P.		Rs.	A.	P.	Rs.	A.	P.
4000 cft	Earth work excavation in mud & sand including removal of surplus soil & lead not exceeding 1/2 mile		21	0		1000 cft	9	-	-	9		
120 cft	Concrete in slope in CM 1:5:10		94 ~~44~~	0	0	100 cft	~~44~~	-	-	113		
340 cft	Random rubble masonry in CM 1:5		83 ~~84~~ 9	8	0	"	~~28~~			284		
150 cft	Pointing with CM 1:5		~~9~~	~~10~~ 8	-	100 cft	~~15~~	-	-	14		
34 cft	Curbstone for slab	—	3	8	-	1 cft	119	-	-	119		
1000 cft	Rough stone dry packing for protection		34	8	-	1000 cft	35	-	-	35		
LS	Extra for any unforseen work		W.S.			LS	26	-	-	26		
							600					
	Supervision charges at 5 per cent											
						Grand Total Estimate ..						

Divisional officer (or other countersigning officer to be named).

Sanctioned for 194 -194 .

Signature and designation of the officer submitting this estimate.

8/7/13 AE-CP

Collector or other sanctioning officer (to be named).

Tahsildar or other officer (to be named).

Connecting Box Culverts

DETAILED ESTIMATE. 421,104—17-11-52. C.F. 150-(1).

District at 3/3-4, 3/6-7 & 3/7-40 **Taluk**
for Sarvan Irrigation Road

Village and Survey 3 Nos = **Date and cost of original construction**

Name and number of work **Date and cost of last repairs**

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
1. Earth work excavation in all soils except rock for foundations.						
	~~1×2~~	~~16-0~~	~~16-0~~	3-0		
Retaining	1×2	16-0	3-0	3-0	288	
Extra if required	2×2	2-0	3-0	3-0	72	
				4 —	40	
					400 cft	
2. Cement Concrete 1:3:6 in foundations	CM	with 1½	stone			
Returns	1×2	16-0	3-0	1-0	96	
	2×2	2-0	3-0	1-0	24	
					120 cft	
3. Random rubble masonry in Cement mortar 1:5						
Abutment	1×2	15-0	(6+2)0	3-6	184	
Returns	2×2	3 6+2)0	(6+2)0	3 6	68	
		2	2			
Parapet	2	16-6	1-3	2-0	53	
Extra under Return	2×2	4-0	1 3	0-6	10	
Coping	2	10-0	1-0	0 9	15	
					330 cft	
4. Plastering with Cement mortar 1:5		½ inch				
Parapet exposed	2	both	7-0		147 sft	15 sqft
5. Cart stone work for slab	1	15-0	4-0	0-6	30 cft	
6. Engineers dry packing stone around						
Coping	4	8-0	1-0	3-0	96 cft	100 cft.
7. Extra for every inspection chamber of 1 cft					6s	
		Standard				
		28 (G)				
Data						
1) Earth work excavation in all soils excepting rock or river sand Extra						
1000 cft 1000 cft	2nd	21-60	1000 cft	21-60		
2nd Cement mortar 1:5						
1000 cft. Sand		2-80	1000 cft	2-80		Sand for
200 cft Cement.		87-50	1 Ton	10-00		Cement
		7-13	1000 cft	7-13		
Sand 1000 cft & 1 MM ½ MCT		76-15-2		15-6-3		
200 cft Sand 30 MM ½ MCT		~~76-15-2~~	"			
1000 cft resting Chamber Extra		4-80	"	4-80		
				0-43		
				102-83		

P.T.O.

Details of work.	Number.	Measurement in Feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
3. Rubble stone in Cement mortar 1:5 : 5:0 .						
100 cft rubble 1½" gauge.		23.0.0	100 cft	23.0.0		
50 cft mortar.		62.8.0	"	57.4.0		
½ Mason Mates		2.12.0	each	1.6.0		
5 Mates Man Coolies		1.8.0	"	7.8.0		
4 " Woman "		0.12.0	"	3.0.0		
100 cft rubble 2F haul load transfer		6.14.0	100 cft	6.14.0		
				0.2.0		
			Total	93.2.0		
4) Random rubble masonry in Cement mortar 1:5.						
110 cft Rangholaire.		16.0.0	100 cft	17.9.7		
34 cft mortar.		62.8.0	"	30.13.6		
5 Mates Mason Mates		2.12.0	each	13.12.0		
4 " Man Coolies		1.8.0	"	6.0.0		
4 " Woman "		0.12.0	"	3.0.0		
110 cft Rubble as above.		6.14.0	100 cft	7.9.0		
Sundries			5% —	0.3.11		
				83.0.0		
5) Calstone work for slab .	2)1	3.8.0	1 cft	3.8.0		
6. Plastering with Cement mortar 1:3 - ½" thick						
5 cft mortar.		62.8.0	100 cft	5.2.0		
1 Brick layer Mates		2.12.0	each.	2.12.0		
½ Man Coolies		1.8.0	"	0.12.0		
1 " Woman "		0.12.0	"	0.12.0		
Sundries			5% —	0.2.0		
				9.8.0		
7. Rangholaire dry packing for pavement						
110 cft Rangholaire		6.0.0	100 cft	17.9.7		
3 Mates Man Coolies.		1.8.0	each	4.8.0		
2 " Woman "		0.12.0	"	1.8.0		
1 " Woddar.		3.0.0	"	3.0.0		
110 cft rubble as above.		6.14.0	100 cft	7.9.0		
Sundries			5% —	0.5.7		
				34.8.0		

Certified that the rates and heads noted above are correct to the best of my knowledge.

Sundram
28/6/08
Inspector of Works

L. A. Gapper
897 (1)
AE Cr

Abstract Estimate.

C.P. 176 (2).

Quantity. (1)	Description of work. (2)	Item number in the schedule of rates. (3)	Rate. (4)	Per (5)	Total. (6)	Amount. (7)
			Rs. A. P.		Rs. A. P.	Rs. A. P.
400 cft	Earth work excavation in all sorts excepting rock	-	21 6 -	100 cft	9 - -	
120 cft	Cement concrete in Cement mortar 1:5:10	-	93 2 -	100 cft	112 - -	
340 cft	Random rubble masonry in Cement mortar 1:5		83 - -	Do.	282 - -	
150 sft	Plastering with Cement mortar 1:5 ½" Thick	—	9 8 -	100 sft	15 - -	
30 cft	Cast stone work for slab	-	3 8 -	1 cft.	105 - -	
100 cft	Rangholeins dry packing for Revetment.		34 8 -	100 cft	35 - -	
Ls.	Extra for any reinforced work		Ls.	Ls.	22 - -	
				Do Ful	580 - -	

Supervision charges at 5 per cent 28 68

Grand Total Estimate ..

Divisional officer (or other countersigning officer to be named).

Sanctioned for 194 -194 .

Signature and designation of the officer submitting this estimate.

Collector or other sanctioning officer (to be named).

Tahsildar or other officer (to be named).

DETAILED ESTIMATE. 421,104—17-11-52. C.F. 180 (1).

Const Irrigation & pipe Culvert 45" dia
District cattle/2 of Saun Irrigation Low Taluk
Village and Survey Near Jamkhi Jamkhi main town. Date and cost of original construction

Name and number of work Date and cost of last repairs

Details of work.	Number.	Measurement in feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
1. Earth work excavation in all soils excepting rock requiring blasting:-						
for headwalls	(2)	6-6	2-6	3-0	98	
" sides	2@	1-6	2-6	3-0	23	
bremn	1	21-0	2-0	1-6	63	
Extras if required		10	—	—	116	
					300 cft.	
2. Cement Concrete plain in CM 1:5:10.						
for Headwalls	2	6-6	2-6	1-0	33	
" wings	2@	1-6	2-6	1-0	8	
					41 or 45 cft.	
3. Random rubble masonry in Cement mortar 1:5.						
Headwalls	2	5-6	1-6	5-0	83	
wings	2@	1-6	1-6	5-0	23	
Coping	2	6-6	1-0	0-9	10	
					116 or 120 cft.	
4. Supplying and fixing RC. Hume pipes 1-6" dia with Collars Centrally						
fixed	1	21-0			21 Rft	
5. Plastering with Cement mortar 1:3. ½" thick						
Both headwalls	2	5-6	8-0		88.	
" wings	2	1-6	4-0		12	
Extras					20	
					120 sft	
6. Rough hewn dry packing for revetment:-						
Revetment	1	5-0	5-0	1-0	25 cft	
7. Extra for any unforseen items of works.					L.S. —	

28/2/53

Note:

Items 1, 2, 3 & 5 same as the Data for Construction of Culvert at 0/0 —

Item 4 and 6 same as the Data for Construction of Culvert at 21-0/1+260

28/2/53

C.F. 150

Details of work.	Number.	Measurement in Feet. Length.	Breadth.	Depth.	Area or contents.	Total quantity of each description of work.
		Abstract				
300 cft. Earth work excavation in all soils excepting rock requiring blasting			21·6·0	100cft	7	
Cement Concrete stone in Cement 45 cft. mortar 1:5:10			91·8·0	100cft	38	
Random rubble masonry 120 cft in Cement mortar 1:5			81·12·0	100cft	98	
Supplying and fixing R.C. stone pipe 1-6" dia with necessary 21 Rft. Collars etc Complete			11·8·0 1400 81	1 Rft	242 ~~294~~	
Plastering with Cement mortar 120 sft. 1:5 - ½" thick			9·0·0	100sft	11	
Ring shaken dry packing 25 cft in Revetments			34·8·0	100cft	9	
Extras for any contingencies items of work				Total.	25 ~~450~~/81	430/-

B. Chandulal
2868
Sanitary Engrs

A. E. Co
87/53
AE. C.

General abstract for earthwork in road and in pipe Culverts and box Culverts.

ESTIMATE FORM—Abstract.

Item number. (1)	Quantity. (2)	Description of work. (3)	Rate. (4)	Per (5)	Amount (6)	Total. (7)
			RS.		RS.	RS.
1.		~~Forming a road for~~ Irvakkin to Sanur (2/1-2 of ~~Deliverables to 2/4 of Earthworks~~).			~~6000/-~~	
2.		Constructing a pipe Culvert 1'0 dia at o/o of Irvakkin & Sanur Road. One only	270/- ~~300/-~~	each	270 ~~300/-~~	
3.		Constructing 1-6" dia pipe Culvert at 0/1+200 0/5+300 and 0/6+100. . 3 Nos.	330/- ~~380/-~~	"	990 ~~1140~~	
4.		Constructing Box Culverts at 0/4 to 0/4 1-2, 1/5-6 and 2/1-2. 4 Nos	600/-	"	2400	
5.		Constructing box Culvert at 3/3-4, 3/6-7 and 3/7-8/0 — 3 Nos.	580/-	"	1740	
6.		Constructing a pipe Culvert 1-6" dia at 4/2 of Irvakkin & Sanur Road One	430/- ~~450/-~~	"	430 ~~450~~	
					~~1200~~	5830
		Petty Supervision and Contingencies.			~~540~~	270
			Total.		~~12600/-~~	6100

T. Sundaram
28683
Supervisor Mates

Allocated
Earth work Roads 3 — 6000/-
12 Culverts — ~~6000~~ 6100/-
~~12600~~

A. Executive Engineer
8/3/53
AE SP

Constructing a Road from Saiem to Dreuilin with 12 Culverts and one Bridge

ESTIMATE FORM—Abstract. GENERAL. 43

Item number. (1)	Quantity. (2)	Description of work. (3)	Rate. (4)	Per (5)	Amount (6)	Total. (7)
			Rs.		Rs.	Rs.
~~1. Earthwork in road Earth work only~~					~~6600/-~~	
2.		Constructing 12 Culverts (Cost in detail)		By	6600/-	6100 ✓
3.		Constructing a Bridge at 3/1-2		By	~~9000~~ 9850 - ½	9000 ✓
				Total	~~22450~~	By 15,100 ✓

Executive Engineer
3.7.53
Superintending Engineer.

2-A-Capture
8/7/53
A.E.C.

Allocation of expenditure

	Description.	Cost Borne by Panchayat Bds & beneficiaries Rs			Borne by C.P. Dept. Rs
1.	Pipe culvert at 0/0				270 ✓
2.	" at 0/1+240				330 ✓
3	" at 0/5+300				330 ✓
4	" at 0/6+100				330 ✓
5	Box culvert at 0/7+1/0				600 ✓
6	" 1/1-2	600 ✓			
7	" 1/5-6	600 ✓			
8	" 2/1-2	600 ✓			
9	" 3/3-4	580 ✓			
10	" 3/6-7	580 ✓			
11	" 3/7+4/0	580 ✓			
12	Pipe culvert 4/2	430 ✓			✓
13	Bridge at 3/1-2				9000 ✓
		3970 ✓			10,860 ✓
	Contingencies & Petty Supervision charges on culverts only	180 ✓			90 ✓
		4150 ✓		+	10,950 = Rs 15,100 ✓

Grand Total of Estimate ..

STATION

Date 194

Executive Engineer,

(Cost of earthwork for formed road Rs 600, is excluded from this)

(See abstract ante =)

Estimated cost of 12 culverts and 1 bridge Rs 15,100/-

Contribution by beneficiaries (Cost of 7 culverts) Rs. 4150

Sanction (Cost of 5 culverts and 1 bridge) Rs 10,950

Sanctioned for Rs 10,950/-
(Rupees Ten thousand nine hundred and fifty only.)

O/C

D.E.P.

28.8.53

Constructing a road from Savur to Irvalivim Cost of 12 Culverts and One Bridge.

Est. Rs. 15100/- ~~22450/-~~

Abstract

COMMUNITY PROJECTS - South Kanara Area - Block III - Communications - Construction of revetment on the sides of the bridge being constructed on the Samur--Irvathur road - Estimate - Sanctioned.

- -

AGRICULTURE DEPARTMENT

G.O. Ms. No.1975 Dated 16th June 1954.

READ:

1. G.O. Ms. No. 2360 Public (Community Projects) dated 3-9-1953.
2. From the Project Executive Officer, Mangalore, ref. C.1631/53-B dated 26-4-1954.

ORDER:

Sanction is accorded to an expenditure not exceeding Rs.2350/- (Rupees two thousand three hundred and fifty only) being the estimated cost of constructing stone-revetment for a length of 100 feet and 250 feet respectively on both sides of the approaches to the bridge being constructed on the road from Samur to Irvathur sanctioned in the G.O. cited. The sanction is counted against relevant provision under "Communications - Bridges" in the approved overall programme.

2. The expenditure should be debited to "63.B. Community Developement Projects - Communications - I. Works".

3. The Project Executive Officer, Mangalore is requested to get the work executed early and submit a copy of the completion report to Government in due course.

(By Order of the Governor)

N.V. Engavanan,
Deputy Secretary to Government

To the Project Executive Officer, Mangalore.
the Accountant General, Madras.

Copy to the Secretary, Community Projects Administration, Regal Buildings, New Delhi.
" Collector of South Kanara.
" A. Balakrishnan, I.A.S., Accountant General, Madras.
" G.O. Ms. 2360 Public (C.P.) dated 3-9-1953.
" Agriculture D.VII, D.VIII & Techl.Sections.

Forwarded / By Order

Superintendent

mps/16-6

Pub(CP Audit) Dept

(CP 23630/53) Sub:- Community Projects. South Kanara Area- Block III - Communications- Formation of Sanoor Divatthur road with 1 bridge, 5 pipe culverts and 7 box culverts- Estimate

Ref- From the PEO Mangalore. Ltr No. 1031/53-B dt 4-8-53.

Please see the letter from the PEO Mangalore at p1 Cr. The PEO encloses an estimate for Rs 22,400/- for the formation of the road from Sanoor to Divatthur, for sanction. The length of the road is 4 miles and 2 furlongs and will be formed as an earthen road. As it is, a cart track exists for a length of about 2 miles and that too in a neglected condition. For the rest, only a foot path exists. The proposal is to widen & form a Kaccha road with 1 bridge, 5 pipe culverts and 7 box culverts. The road branches off from the Mangalore-Karkal road and joins the Belvai branch road. The cost of land gifted away for widening is not included in the estimate. The reforming of road alone would cost Rs 6000/-; the cost of the 12 culverts Rs 6600/- and the bridge Rs 9800/- Of this the road will be formed by the villagers and the beneficiaries, together with the Concerned panchayat boards. Are agreeable to meet the cost of 7 of the culverts, costing Rs 4020/- Hence the balance of Rs 12,380 is required for sanction.

The PEO reports that the work has been included in the over-all programme already approved and also approved by the Project Advisory Committee.

The Project estimate approved by the CPA for the 1st year provides for 50 culverts, and 17 bridges. at an expenditure of Rs 55,000 & Rs 150,000/-, respectively So far sanctions have been accorded for the Construction of 78 bid culverts & road dams and 2 bridges involving an expenditure of Rs 46,737 and Rs 19,636 respectively. Hence there is enough provision for these works (Rs 2580 for culverts and Rs 9800 for the bridge).

But the estimate for the bridge Could not be checked for want of details of design calculations. These were said to have been enclosed with the estimate, but are not forthcoming The PEO may be asked to furnish these details now

A draft memo is put up for approval

11.8.53

(Draft approved by A&So).

12/8/53

Issued as Memo No. 23630. Public (C.A. trans) 53-13 13/8/53 p3 ef

Ref:- From the P.E.o Mangalore Ref cNo. 1631/53-B & 17.8.53 p5 ef

Please see the letter from the P.E.O. Mangalore at p 5 ef. The calculations have been now furnished. The estimate has been checked. The cost of the bridge has been reduced to Rs 9000/- and that of the 12 culverts to Rs 6100/- by alterations in rates based on standard schedule of rates. Sanction required is in respect of the 1st 5 culverts costing Rs ~~2950~~ 1950/- and the 1 bridge costing Rs 9000/-. The cost of the next 5 culverts will be borne together by the Panchayat board of Irvathur and the villagers. The cost of the remaining 2 culverts will be borne by the Panchayat board of Sanoor and the villagers. Thus the people share on the cost of culverts will be Rs 4150/-. Besides this the earthwork for the formation of the road is also being done by them at their cost. The value of this is estimated as Rs 6000/-. This part may be excluded from the gross estimate, as the inclusion may entail difficulties in the form of recording of measurements and keeping account of the earthwork done. This will be rendered more difficult by the fact that the road work was started ~~before~~ on 30-4-53. and would have been completed by now.

The total cost of masonry works alone is now Rs 15,100/- out of which, sanction may be accorded for Rs 10,950/-

A draft order is put up for Approval

The estimate may be Countersigned. 2 Copies

28.8.53

Note is in order

~~The~~ sanction only for such of the culverts from which no contribution is forthcoming to along the bridge. Pl revise the sanction & the draft order. The rest of the items will be carried out by the beneficiaries & mention of this may be made in the draft order

Speak

29/8/53

29/8/53

3

The draft order and the cost of the estimate may be approved by S.C.

S
25/9/53

A.S.
21/9/53

DC

Ishwar/as Govt's No. 2360. Public (CA) 23.9.53